

Carbohydrate Research 297 (1997) III-IV

Author index

Ágoston, K. 153 Akiyama, T. 365

Bandwar, R.P. 333, 341 Batta, G. 153 Bernlind, C. 251 Block, K. 347 Boggs, J.M. 93 Boullanger, P. 117 Bretting, H. 281

Caldeira, M.M. 191 Carvalho, F. 117 Coutinho, P.M. 309

Das, T. 243 Delcour, J.A. 347 Detellier, C. 201 Doco, T. 181 Dowd, M.K. 309

Eerlingen, R.C. 347 Evangelatos, G.P. 289

Fincher, G.B. 365

Gil, V.M.S. 191 Grand, E. 169

Hara, K. 301 Havlíček, V. 375 Heidelberg, T. 281 Hrmova, M. 365

Ishida, M. 379 Ishihara, M. 273 Ishii, T. 273 Israeli, Y. 201

Jacobs, H. 347 Jegorov, A. 375 Jung, K.-H. 229

Kadam, R.M. 333
Kamal, M. 175
Kamerling, J.P. 209
Kariya, Y. 273
Kawamura, M. 187
Kerékgyártó, J. 107, 153
Kitahata, S. 301
Kitamoto, T. 127
Klaveness, J. 325
Koizumi, K. 301
Koshy, K.M. 93
Kulicke, W.-M. 135

Kumazawa, T. 379 Kyogashima, M. 273

Lafont, D. 117 Leondiadis, L. 289 Lettau, A.I. 135 Leydet, A. 175 Livaniou, E. 289 Lubineau, A. 169 Lüttge, H. 281

Maaheimo, H. 145 Matsuba, S. 379 McNaught, A.D. 1 Micali, F. 101 Montero, J.-L. 175 Murata, J. 127

Nagy, Z. 107 Nakai, H. 187 Norrild, J.C. 261

Ohya, Y. 127 Okada, Y. 301 Okazaki, Y. 301 Onodera, J. 379 Oscarson, S. 251 Ouchi, T. 127

Pakhomova, S. 375 Pavia, A.A. 175 Pedersen, C. 261 Pellerin, P. 181

Räbinä, J. 145 Ragoussis, V. 289 Ramos, M.L. 191 Ransom, R.F. 357 Rao, C.P. 333, 341 Reilly, P.J. 309 Renkonen, O. 145 Rizzo, R. 101 Rongved, P. 325 Roque, J.-P. 175

Sastry, M.D. 333 Sato, S. 379 Sawada, M. 187 Scherrmann, M.-C. 169 Schmidt, R.R. 229 Sedmera, P. 375 Shashidhar, M.S. 243 Shibuya, N. 365 Skjåk-Bræk, G. 101 Søtofte, I. 261 Staaf, M. 297 Stangier, K. 281 Strande, P. 325 Szurmai, Z. 107, 153

Takai, Y. 187 Terjung, A. 229 Thielking, H. 135 Thiem, J. 281 Thu, B. 101 Tikkanen, J.M. 209 Trumtel, M. 163

Uchiyama, T. 187 Urbina, F. 297 Van Dorst, J.A.L.M. 209 Van Heusden, C.J. 209 Vidal, S. 181 Vittur, F. 101 Vliegenthart, J.F.G. 209 Volc, J. 375 Vottero, P. 117

Walton, J.D. 357 Watabe, S. 273 Weintraub, A. 297 Wessel, H.P. 163 Widmalm, G. 297 Williams, P. 181 Winum, J.-Y. 175



Carbohydrate Research 297 (1997) V-VIII

Subject index

2-Acetamido-2-deoxyglucosides

A simple approach to the synthesis of muramic acid and isomuramic acid: ¹H and ¹³C NMR characterisation 289

N-Acetyllactosamine

Synthesis of Hexp-(1 \rightarrow 4)- β -D-GlcpNAc-(1 \rightarrow 2)- α -D-Manp- (1 \rightarrow O)(CH₂)₇CH₃ probes for exploration of the substrate specificity of glycosyltransferases: Part II, Hex = 3-O-methyl- β -D-Gal, 3-deoxy- β -D-Gal, 3-deoxy- β -D-Gal, 3-deoxy- β -D-Gal, β -D-Gul, α -L-Alt, or β -L-Gal 209

Alditols

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Alginate gel beads

The spatial distribution of calcium in alginate gel beads analysed by synchrotron-radiation induced X-ray emission (SRIXE) 101

Alkylations

Silver (I) oxide assisted *O*-alkylation of 2,4-di-*O*-benzoyl-*myo*-in-ositol-1,3,5-orthoformate and its 6-*O*-substituted derivatives: transan-nular participation of oxygen 243

Amino-acid linker

Starch microspheres as carriers for X-ray imaging contrast agents: Synthesis and stability of new amino-acid linker derivatives 325

Aminodeoxyalditols

A highly stereoselective synthesis of 1-amino-2,5-anhydro-1-deoxyhexitols via 2-trifluoromethyl-oxazolinium intermediates 261

New 2/2-type surfactants via anomeric *O*-alkylation of mannofuranose 229

Anhydrohexitols

A highly stereoselective synthesis of 1-amino-2,5-anhydro-1-deoxyhexitols via 2-trifluoromethyl-oxazolinium intermediates 261

Anomeric structure

The effect of anomerism and hydration on the C-O-S vibrational frequency of D-galactose-3-sulfate determined by FTIR spectroscopy 93

Apple

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Aqueous hetero Diels-Alder reactions

New access to C-disaccharide analogs of α , α -trehalose using an aqueous hetero Diels-Alder reaction 169

 α -Arabinofuranosidase, extracellular

Purification and characterization of extracellular β -xylosidase and α -arabinosidase from the plant pathogenic fungus *Cochliobolus carbonum* 357

AutoDock

Automated docking of isomaltose analogues in the glucoamylase active site 309

Bacterial antigens

Synthesis of L-glycero-D-manno-heptopyranose-containing oligosaccharide structures found in lipopolysaccharides from *Haemophilus* influenzae 251

 $(1 \rightarrow 3)$ - β -glucanase

Purification and characterization of a $(1 \rightarrow 3)$ - β -D-glucan endohydrolase from rice (*Oryza sativa*) bran 365 Bioconversion

Structural analysis of crystalline D-erythro-hexos-2,3-diulose (2,3-diketo-D-glucose) prepared enzymatically from D-glucose 375

Bis-C-glycosylbenzene derivatives

Synthesis of 1-[3,5-bis-(2,3,4,6-tetra-O-acetyl- β -D-glucopyranosyl)-2,4,6-trihydroxyphenyl]ethanone: An intermediate of potential usefulness for synthesis of bis-C-glucosyl flavonoids 379

Bismuth(III) halides

A convenient synthesis of peracetylated glycosyl halides using bismuth(III) halides as catalysts 175

Block glycoside synthesis

Pivalates in the selective protection and activation of maltose for the synthesis of sulfated 3-deoxy-maltosyl- $(1 \rightarrow 4)$ - α , α -trehalose 163

Calcium distribution

The spatial distribution of calcium in alginate gel beads analysed by synchrotron-radiation induced X-ray emission (SRIXE) 101

Carbohydrates

Synthesis of L-glycero-D-manno-heptopyranose-containing oligosaccharide structures found in lipopolysaccharides from *Haemophilus* influenzae 251

Carrot

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Cerebroside sulfate

The effect of anomerism and hydration on the C-O-S vibrational frequency of D-galactose-3-sulfate determined by FTIR spectroscopy 93

Cochliobolus carbonum

Purification and characterization of extracellular β -xylosidase and α -arabinosidase from the plant pathogenic fungus Cochliobolus carbonum 357

Co(II)

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Co(II) 333

Complex

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Co(II) 333

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Ni(II) 341

Complexation

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Complexes

NMR study of the complexation of D-galactonic acid with tungsten(VI) and molybdenum(VI) 191

Conformational analysis

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Contrast agents

Starch microspheres as carriers for X-ray imaging contrast agents: Synthesis and stability of new amino-acid linker derivatives 325

C-O-S vibrational frequency

The effect of anomerism and hydration on the C-O-S vibrational frequency of D-galactose-3-sulfate determined by FTIR spectroscopy 93

Cyclitols

Silver (I) oxide assisted *O*-alkylation of 2,4-di-*O*-benzoyl-*myo*-in-ositol-1,3,5-orthoformate and its 6-*O*-substituted derivatives: transannular participation of oxygen 243

Cycloinulo-oligosaccharide fructanotransferase

Synthesis of methyl 6-O- β -inulotriosyl- α -D-glucopyranoside by intermolecular transglycosylation reaction of cycloinulo-oligosaccharide fructanotransferase 187

Cyclomaltohexaose (α CD)

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

Daucus carota

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Deoxygenation

Pivalates in the selective protection and activation of maltose for the synthesis of sulfated 3-deoxy-maltosyl- $(1 \rightarrow 4)$ - α , α -trehalose 163

3-Deoxy-maltose

Pivalates in the selective protection and activation of maltose for the synthesis of sulfated 3-deoxy-maltosyl- $(1 \rightarrow 4)$ - α , α -trehalose 163

Detergents

New 2/2-type surfactants via anomeric *O*-alkylation of mannofuranose 229

2,3-Diketo-D-glucose

Structural analysis of crystalline D-erythro-hexos-2,3-diulose (2,3-diketo-D-glucose) prepared enzymatically from D-glucose 375

Dimerization

Effect of dimerization of the D-glucose analogue of muramyl dipeptide on stimulation of macrophage-like cells 127

Docking

Automated docking of isomaltose analogues in the glucoamylase active site 309

Electrospray

Structural analysis of crystalline D-erythro-hexos-2,3-diulose (2,3-diketo-D-glucose) prepared enzymatically from D-glucose 375

Enterotoxigenic

Structure determination of the O-antigenic polysaccharide from the enterotoxigenic *Escherichia coli* (ETEC) O101 297

Enzymatic degradation

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

Enzymic liquefaction

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Erythritol derivatives

New 2/2-type surfactants via anomeric *O*-alkylation of mannofuranose 229

Escherichia coli, O-antigen

Structure determination of the O-antigenic polysaccharide from the enterotoxigenic *Escherichia coli* (ETEC) O101 297

Fucose branch

Structure of fucose branches in the glycosaminoglycan from the body wall of the sea cucumber *Stichopus japonicus* 273

Fungi

Purification and characterization of extracellular β -xylosidase and α -arabinosidase from the plant pathogenic fungus *Cochliobolus carbonum* 357

Galactan

The specificity of an α -(1 \rightarrow 2)-L-galactosyltransferase from albumen glands of the snail *Helix pomatia* 281

p-Galactonic acid

NMR study of the complexation of D-galactonic acid with tungsten(VI) and molybdenum(VI) 191

Galactose-3-sulfate

The effect of anomerism and hydration on the C-O-S vibrational frequency of D-galactose-3-sulfate determined by FTIR spectroscopy

L-Gal transferase

The specificity of an α -(1 \rightarrow 2)-L-galactosyltransferase from albumen glands of the snail *Helix pomatia* 281

β -(1 \rightarrow 6)-D-N-acetylglucosaminyltransferase (GlcNAc to Gal)

¹H and ¹³C NMR analysis of the pentasaccharide Gal β (1 \rightarrow 4)GlcNAc β (1 \rightarrow 3)- [GlcNAc β (1 \rightarrow 6)]Gal β (1 \rightarrow 4)GlcNAc synthesized by the mid-chain β -(1 \rightarrow 6)-D-N-acetylglucosaminyltransferase of rat serum 145

Glucan

Correlation between immunological activity, molar mass, and molecular structure of different $(1 \rightarrow 3)$ - β -D-glucans 135

D-Glucitol

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Glucoamylase

Automated docking of isomaltose analogues in the glucoamylase active site 309

D-Glucos

Structural analysis of crystalline D-erythro-hexos-2,3-diulose (2,3-diketo-D-glucose) prepared enzymatically from D-glucose 375

Glycoproteins

Synthesis of Hexp-(1 \rightarrow 4)- β -D-GlcpNAc-(1 \rightarrow 2)- α -D-Manp- (1 \rightarrow O)(CH $_2$) $_7$ CH $_3$ probes for exploration of the substrate specificity of glycosyltransferases: Part II, Hex = 3-O-methyl- β -D-Gal, 3-deoxy- β -D-Gal, 3-deoxy- β -D-Gal, 3-deoxy- β -D-Gal, β -D-Gul, α -L-Alt, or β -L-Gal 209

Glycopyranosyl halides

A convenient synthesis of peracetylated glycosyl halides using bismuth(III) halides as catalysts 175

Glycosaminoglycan

Structure of fucose branches in the glycosaminoglycan from the body wall of the sea cucumber *Stichopus japonicus* 273

C-Glycoside

New access to C-disaccharide analogs of α , α -trehalose using an aqueous hetero Diels-Alder reaction 169

Glycosylation

A convenient access to β -glycosides of N-acetyllactosamine 117

C-Glycosylation

Synthesis of 1-[3,5-bis-(2,3,4,6-tetra-*O*-acetyl-β-D-glucopyranosyl)-2,4,6-trihydroxyphenyl]ethanone: An intermediate of potential usefulness for synthesis of bis-*C*-glucosyl flavonoids 379

C-Glycosyl compounds

Synthesis of 1-[3,5-bis-(2,3,4,6-tetra-*O*-acetyl-β-D-glucopyranosyl)-2,4,6-trihydroxyphenyl]ethanone: An intermediate of potential usefulness for synthesis of bis-*C*-glucosyl flavonoids 379

Glycosyltransferases

Synthesis of Hexp-(1 \rightarrow 4)- β -D-GlcpNAc-(1 \rightarrow 2)- α -D-Manp- (1 \rightarrow O)(CH $_2$) $_7$ CH $_3$ probes for exploration of the substrate specificity of glycosyltransferases: Part II, Hex = 3-O-methyl- β -D-Gal, 3-deoxy- β -D-Gal, β -D-Gul, α -L-Alt, or β -L-Gal 209

Halogenation

A convenient synthesis of peracetylated glycosyl halides using bismuth(III) halides as catalysts 175

Halogenosilanes

A convenient synthesis of peracetylated glycosyl halides using bismuth(III) halides as catalysts 175

Helix pomatia, snail

The specificity of an α -(1 \rightarrow 2)-L-galactosyltransferase from albumen glands of the snail *Helix pomatia* 281

Heptopyranose

Synthesis of L-glycero-D-manno-heptopyranose-containing oligosaccharide structures found in lipopolysaccharides from *Haemophilus* influenzae 251

Heterogeneous doubly branched

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

HPLC

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

Hydrogen fluoride

A highly stereoselective synthesis of 1-amino-2,5-anhydro-1-deoxyhexitols via 2-trifluoromethyl-oxazolinium intermediates 261

Hydrothermal treatment

Effects of hydrothermal treatments on the rheological properties of potato starch 347

Immunological activity

Correlation between immunological activity, molar mass, and molecular structure of different $(1 \rightarrow 3)$ - β -D-glucans 135

Inositol

Silver (I) oxide assisted *O*-alkylation of 2,4-di-*O*-benzoyl-*myo*-inositol-1,3,5-orthoformate and its 6-*O*-substituted derivatives: transannular participation of oxygen 243

Intermolecular transfructosylation

Synthesis of methyl 6-O- β -inulotriosyl- α -D-glucopyranoside by intermolecular transglycosylation reaction of cycloinulo-oligosaccharide fructanotransferase 187

Intermolecular transglycosylation

Synthesis of methyl 6-O- β -inulotriosyl- α -D-glucopyranoside by intermolecular transglycosylation reaction of cycloinulo-oligosaccharide fructanotransferase 187

Iodoacetoxylation

A convenient access to β -glycosides of N-acetyllactosamine 117 2-Iodoglycosyl azide

A convenient access to β -glycosides of N-acetyllactosamine 117

Isomaltose

Automated docking of isomaltose analogues in the glucoamylase active site 309

Isomuramic acid

A simple approach to the synthesis of muramic acid and isomuramic acid: ¹H and ¹³C NMR characterisation 289

Kinetic analysis

Purification and characterization of a $(1 \rightarrow 3)$ - β -D-glucan endohydrolase from rice (*Oryza sativa*) bran 365

Lactal

A convenient access to β -glycosides of N-acetyllactosamine 117 Lactosamine

A convenient access to β -glycosides of N-acetyllactosamine 117 ¹³⁹La NMR

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Lanthanum cation

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

LC-MS

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

Light-scattering

Correlation between immunological activity, molar mass, and molecular structure of different $(1 \rightarrow 3)$ - β -D-glucans 135

Lipopolysaccharide

Synthesis of L-glycero-D-manno-heptopyranose-containing oligosaccharide structures found in lipopolysaccharides from *Haemophilus* influenzae 251 Macrophage-like cells

Effect of dimerization of the D-glucose analogue of muramyl dipeptide on stimulation of macrophage-like cells 127

Maltose

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Co(II) 333

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Ni(II) 341

Malus domestica

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

MDF

Effect of dimerization of the D-glucose analogue of muramyl dipeptide on stimulation of macrophage-like cells 127

Methylation analysis

Structure of fucose branches in the glycosaminoglycan from the body wall of the sea cucumber *Stichopus japonicus* 273

Methyl 6-O- β -inulotriosyl- α -D-glucopyranoside

Synthesis of methyl 6-O- β -inulotriosyl- α -D-glucopyranoside by intermolecular transglycosylation reaction of cycloinulo-oligosaccharide fructanotransferase 187

Mid-chain branching

¹H and ¹³C NMR analysis of the pentasaccharide Gal β (1 \rightarrow 4)GlcNAc β (1 \rightarrow 3)- [GlcNAc β (1 \rightarrow 6)]Gal β (1 \rightarrow 4)GlcNAc synthesized by the mid-chain β -(1 \rightarrow 6)-D-N-acetylglucosaminyltransferase of rat serum 145

MM3

Automated docking of isomaltose analogues in the glucoamylase active site 309

Molecular mechanics

Automated docking of isomaltose analogues in the glucoamylase active site 309

Molybdenum

NMR study of the complexation of D-galactonic acid with tungsten(VI) and molybdenum(VI) 191

Monosaccharide

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Co(II) 333

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Ni(II) 341

Multinuclear magnetic resonance

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Muramic acid

A simple approach to the synthesis of muramic acid and isomuramic acid: ^{1}H and ^{13}C NMR characterisation 289

Mycobacterium

Syntheses of spacer-armed carbohydrate components of the *Mycobacterium avium* serocomplex serovar 8 153

Neighbouring group effects

Silver (I) oxide assisted *O*-alkylation of 2,4-di-*O*-benzoyl-*myo*-inositol-1,3,5-orthoformate and its 6-*O*-substituted derivatives: transannular participation of oxygen 243

Ni(II)

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Ni(II) 341

NMR

¹H and ¹³C NMR analysis of the pentasaccharide Gal β (1 \rightarrow 4)GlcNAc β (1 \rightarrow 3)- [GlcNAc β (1 \rightarrow 6)]Gal β (1 \rightarrow 4)GlcNAc synthesized by the mid-chain β -(1 \rightarrow 6)-D-N-acetylglucosaminyltransferase of rat serum 145

NMR study of the complexation of D-galactonic acid with tungsten(VI) and molybdenum(VI) 191

Structural analysis of crystalline D-erythro-hexos-2,3-diulose (2,3-diketo-D-glucose) prepared enzymatically from D-glucose 375

NMR spectroscopy

Structure determination of the O-antigenic polysaccharide from the enterotoxigenic *Escherichia coli* (ETEC) O101 297

Novel bridge molecules

Syntheses of spacer-armed carbohydrate model compounds 107

Oligo-(N-acetyllactosamino)glycans

¹H and ¹³C NMR analysis of the pentasaccharide Gal β (1 \rightarrow 4)GlcNAc β (1 \rightarrow 3)- [GlcNAc β (1 \rightarrow 6)]Gal β (1 \rightarrow 4)GlcNAc synthesized by the mid-chain β -(1 \rightarrow 6)-D-N-acetylglucosaminyltransferase of rat serum 145

Oligosaccharide synthesis

Syntheses of spacer-armed carbohydrate components of the *Mycobacterium avium* serocomplex serovar 8 153

Synthesis of L-glycero-D-manno-heptopyranose-containing oligosaccharide structures found in lipopolysaccharides from *Haemophilus* influenzae 251

Pectic polysaccharide

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Pectin

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Pectinases

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Pivalates

Pivalates in the selective protection and activation of maltose for the synthesis of sulfated 3-deoxy-maltosyl- $(1 \rightarrow 4)$ - α , α -trehalose 163

Polysaccharides

Starch microspheres as carriers for X-ray imaging contrast agents: Synthesis and stability of new amino-acid linker derivatives 325

Positional isomer, separation

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

Rhamnogalacturonan II

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Rheology

Effects of hydrothermal treatments on the rheological properties of potato starch 347

Ribitol

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Rice

Purification and characterization of a $(1 \rightarrow 3)$ - β -D-glucan endohydrolase from rice (*Oryza sativa*) bran 365

Sea cucumber

Structure of fucose branches in the glycosaminoglycan from the body wall of the sea cucumber *Stichopus japonicus* 273

Simulated annealing

Automated docking of isomaltose analogues in the glucoamylase active site 309

Size-exclusion chromatography

Correlation between immunological activity, molar mass, and molecular structure of different $(1 \rightarrow 3)$ - β -D-glucans 135

Solanum lycopersicum

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Spacer-armed glycosides

Syntheses of spacer-armed carbohydrate model compounds 107 Syntheses of spacer-armed carbohydrate components of the *Mycobacterium avium* serocomplex serovar 8 153

Starch

Effects of hydrothermal treatments on the rheological properties of potato starch 347

Staudinger reaction

A convenient access to β -glycosides of N-acetyllactosamine 117 Stimulation activity

Effect of dimerization of the D-glucose analogue of muramyl dipeptide on stimulation of macrophage-like cells 127

Structural analysis

Isolation by HPLC of the positional isomers of 6^1 , 2^n -di-O- α -D-galactopyranosylcyclomaltohexaose (n = 1-6) and determination of their structures by enzymatic degradation 301

Substrate analogues

Synthesis of Hexp- $(1 \rightarrow 4)$ - β -D-GlcpNAc- $(1 \rightarrow 2)$ - α -D-Manp- $(1 \rightarrow O)(CH_2)_7CH_3$ probes for exploration of the substrate specificity of glycosyltransferases: Part II, Hex = 3-O-methyl- β -D-Gal, 3-deoxy- β -D-Gal, 3-deoxy- β -D-Gal, 3-deoxy- β -D-Gal, 3-amino-3-deoxy- β -D-Gal, β -D-Gul, α -L-Alt, or β -L-Gal 209

Substrate specificity

Purification and characterization of a $(1 \rightarrow 3)$ - β -D-glucan endohydro-lase from rice (*Oryza sativa*) bran 365

Sulfates

Pivalates in the selective protection and activation of maltose for the synthesis of sulfated 3-deoxy-maltosyl- $(1 \rightarrow 4)$ - α , α -trehalose 163 New 2/2-type surfactants via anomeric *O*-alkylation of mannofuranose 229

Sulfate substitution

Structure of fucose branches in the glycosaminoglycan from the body wall of the sea cucumber *Stichopus japonicus* 273

Surface tension measurements

New 2/2-type surfactants via anomeric O-alkylation of mannofuranose 229

Tetrahydrofurans

A highly stereoselective synthesis of 1-amino-2,5-anhydro-1-de-oxyhexitols via 2-trifluoromethyl-oxazolinium intermediates 261

Thermodynamics

Multinuclear magnetic resonance study of the complexation of lanthanum (III) by D-glucitol and ribitol in aqueous solution 201

Tomato

Rhamnogalacturonan II, a dominant polysaccharide in juices produced by enzymic liquefaction of fruits and vegetables 181

Transition metal

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Co(II) 333

Transition-metal saccharide chemistry: synthesis and characterization of D-glucose, D-fructose, D-galactose, D-xylose, D-ribose, and maltose complexes of Ni(II) 341

Trehalase inhibitors

New access to C-disaccharide analogs of α , α -trehalose using an aqueous hetero Diels-Alder reaction 169

Trehalose

New access to C-disaccharide analogs of α , α -trehalose using an aqueous hetero Diels-Alder reaction 169

Tungsten

NMR study of the complexation of D-galactonic acid with tungsten(VI) and molybdenum(VI) 191

X-Ray diffraction

Structural analysis of crystalline D-*erythro*-hexos-2,3-diulose (2,3-diketo-D-glucose) prepared enzymatically from D-glucose 375

X-ray fluorescence

The spatial distribution of calcium in alginate gel beads analysed by synchrotron-radiation induced X-ray emission (SRIXE) 101

X-ray imaging

Starch microspheres as carriers for X-ray imaging contrast agents: Synthesis and stability of new amino-acid linker derivatives 325

β-Xylosidase, extracellular

Purification and characterization of extracellular β -xylosidase and α -arabinosidase from the plant pathogenic fungus *Cochliobolus carbonum* 357

